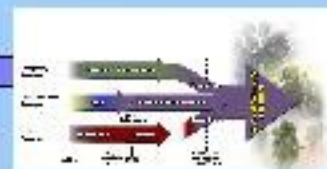


SPOD Enhancements for the Objective Force

Dr. Donald T. Resio
Senior Scientist
Coastal and Hydraulics
Laboratory



DCSLOG Transformation Charter



- **Enhance Strategic Responsiveness -**
meet new deployment timelines
- **Reduce the CS/CSS Footprint in the Combat Zone**
- **Reduce Cost of Logistics without Reducing Warfighting Capability or Readiness**



1898



- Existing Large Ports
- Very Small JLOTS

WWI



- Existing Large Ports

WWII



- Existing Large Ports
- Needed JLOTS

Korea/Vietnam



- Existing Large Ports
- Needed JLOTS

- Existing Very Large Ports
- Plus JLOTS

Desert Storm



- Existing Intermediate-Size Ports
- JLOTS?
- ISB's

Future Army



Major problems in past have been at the Nodes!!

▲ *No large ports available*



▲ *Sea State 3 has been a “war stopper”*

▲ *Somalia Experience*

▲ *JLOTS Exercises – I, II, and III*



Links and Nodes in Bare-Beach JLOTS

	Link	Offshore Node	JLOTS Link	Coastal Node	JLOTS Link	Inland Node
<i>Transportation System Element</i>	CONUS to Theater	Transfer to Lighter	JLOTS Link Offshore to Coast	Transfer to On-land Transporters	Beach to TAA	Staging for TAA
<i>Systems</i>	Deep-Draft Sealift Ship	Cranes RRDF's Ramps RIBS etc.	LCU's LSV's Causeway Ferries etc..	Causeways Piers RTCH's Cranes, etc.	Causeways Piers RTCH's Cranes, etc.	—
<i>Operational Problems</i>	LOW	Very High	Moderate To High	Very High	Moderate	—
<i>R & D Obstacles</i>	LOW	High	High	High	High	Moderate

Iron Mt.?

Iron Mt.?

Rapid Port Enhancement

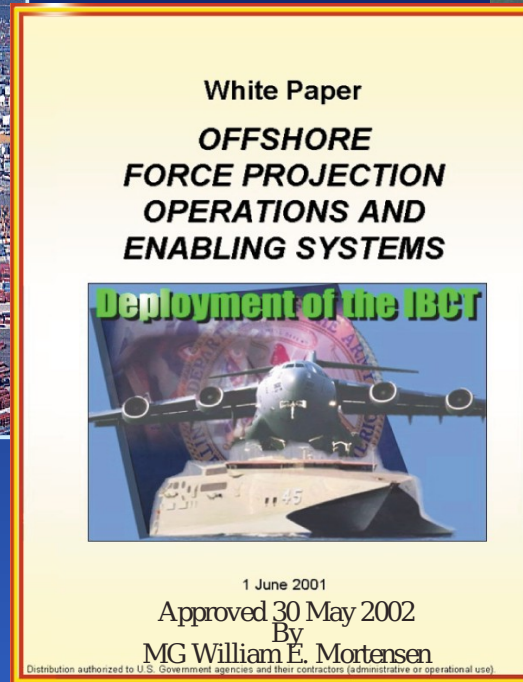
From This



Only 14 deep-draft ports available in primary AOR's

These are expected to be damaged or denied in most situations

- Army Vision requires mix of both airlift and sealift
- Existing shallow-draft ports must be enhanced to meet Army Vision requirements



To This



- Over 100 ports available in the same AOR's with high-speed shallow-draft vessels
- Ports are dispersed throughout AOR's

Links and Nodes with TSV - Based Systems

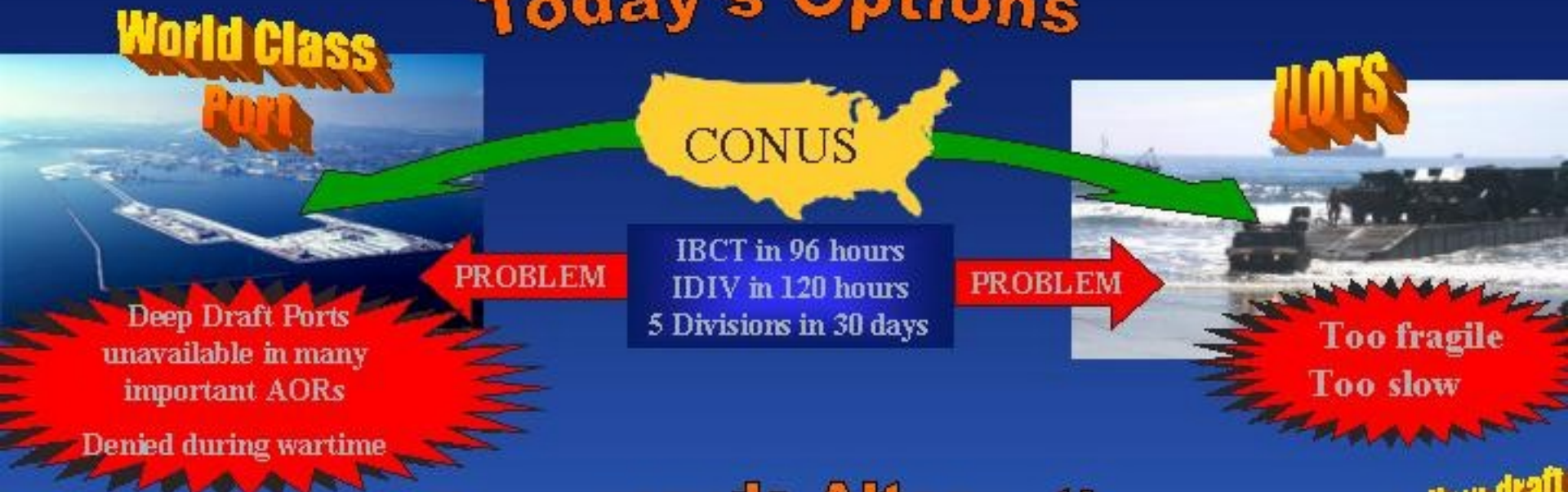
	Link	Node	Link	Node
<i>Transportation System Element</i>	CONUS to ISB	ISB	ISB to Coast	Port Facility at Coast (TAA)
<i>Systems</i>	Deep-Draft Sealift Ship	Existing Large Ports	TSV (HSV)	Enhanced or New Ports
<i>Operational Problems</i>	Low	Low	Low	Moderate
<i>R & D Obstacles</i>	Low	Low	Low	High

Iron Mt.?

Iron Mt.?

The Sealift Deployment Challenge

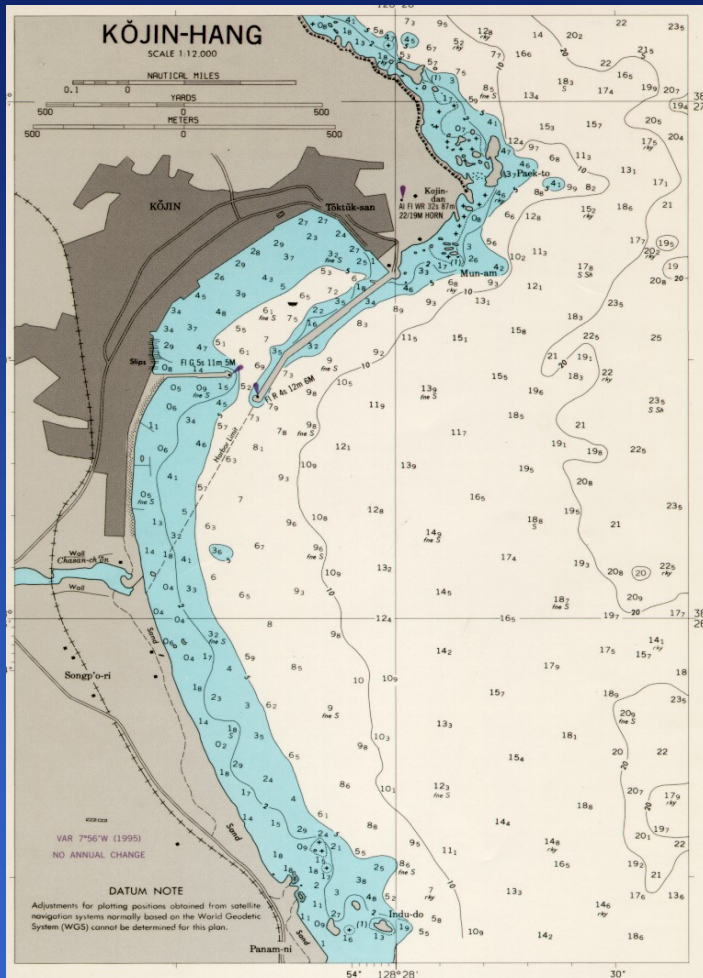
Today's Options



Tomorrow's Alternative



KOJ IN-HANG



LAT: 38° 24' N
LONG: 128° 27' E

ADVANTAGES

- *Good approach*
- *Good anchorages inside and outside harbor*
- *Navigational aids*
- *Lighted entrance*
- *Adequate depth and turning basin*
- *Protected harbor*
- *Breakwaters*
- *Quay wall*
- *Road system and rail access*

DISADVANTAGES

- *Close proximity to North Korea (10 km)*
- *No ramps or piers*
- *No apparent storage facilities*
- *Limited staging area*
- *No apparent cargo handling equipment*

ESTIMATED SUPPORT REQUIREMENTS

- *Build ramp(s), pier, and staging area*

SURVEY REQUIREMENTS

- *Staging area*
- *Quality rail/road network*
- *Survey tidal range*
- *Sea and wind condition forecasts*

INDEX #1

OBJECTIVE FORCE LOTS?



SPOD Enhancements/Alternatives for the Objective Force (SEA-OF)

- High Speed Sealift combined with Rapid SEA-OF Enhancement Capabilities
- Studies show that throughput rates would be comparable to world class ports
- SEA-OF allows utilization of existing commercially developed high speed sealift vessels

Existing Small Port



Expedient
Dredging

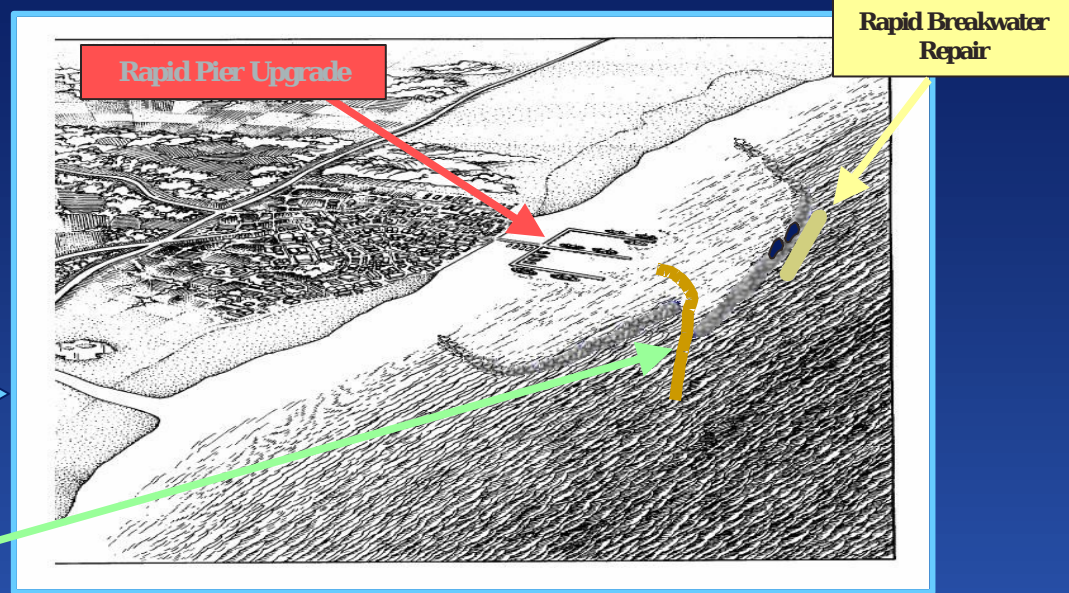
Initially Bare Beach Port

Pacing Technologies:

Nearshore Breakwater Technology

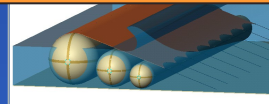
Rapid Port Upgrade/Construction Technology

RIDE Technology Design development



Nearshore Breakwater system

Improved Floating Causeways



TSV

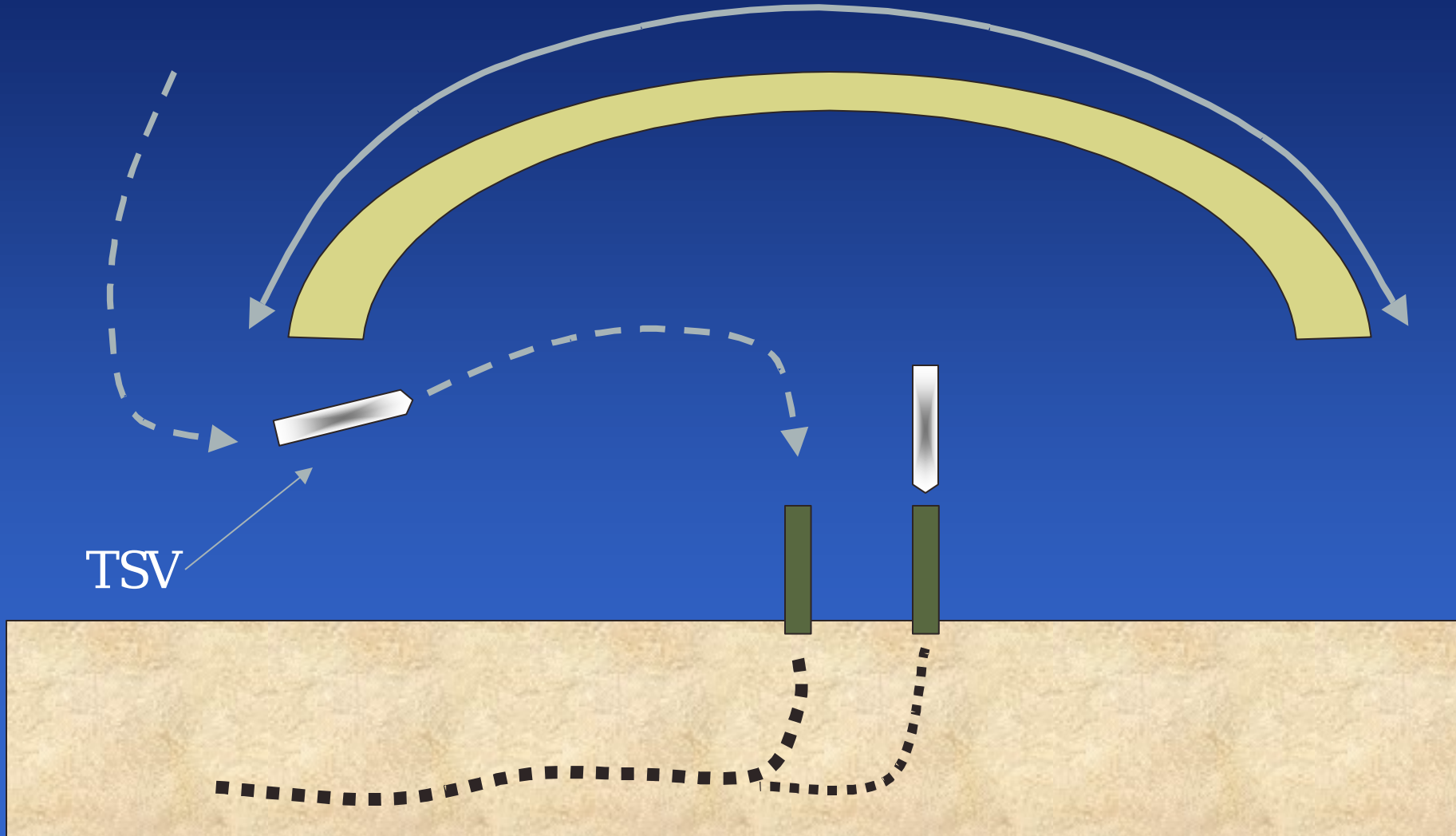


Rapid Infrastructure
Development &
Enhancement

OBJECTIVE FORCE LOTS

Bare Beach Scenario

~1500 ft



SPOD Enhancement/Alternative for the Objective Force (SEA-OF)

▲ Today

▲ Port Opening Company

- ▲ *Repair conventional facilities*
- ▲ *Time frame is weeks*
- ▲ *No prefabricated elements*
- ▲ *On-site analysis of needs*

OBJECTIVE: Return port to good working condition



● Tomorrow

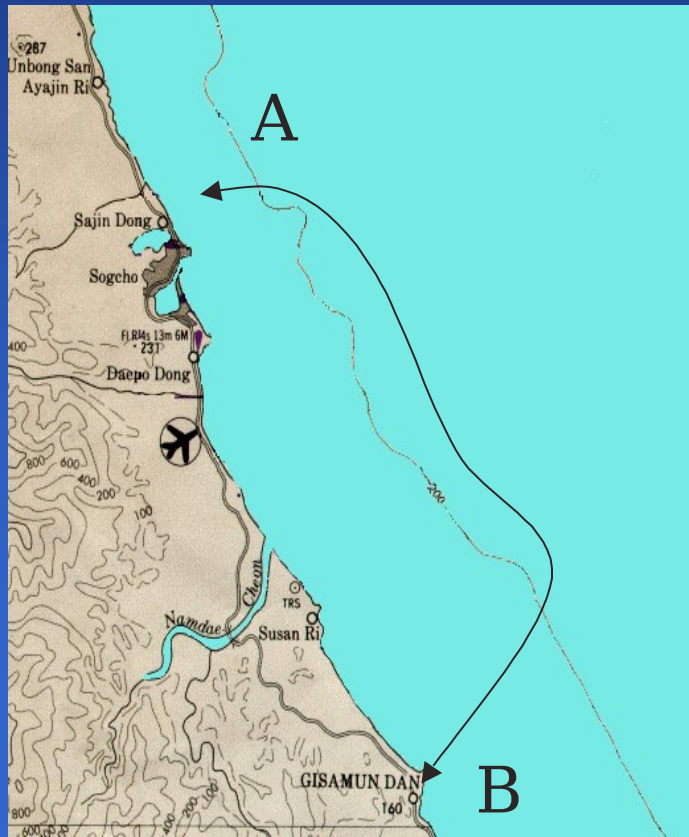
● Engineer Unit

- *Enhances throughput in large/intermediate ports*
- *Time frame is days*
- *Uses prefabricated (hybrid fabric) elements*
- *Much of site analysis performed up front*

OBJECTIVE: Increase the number of lanes into the infrastructure

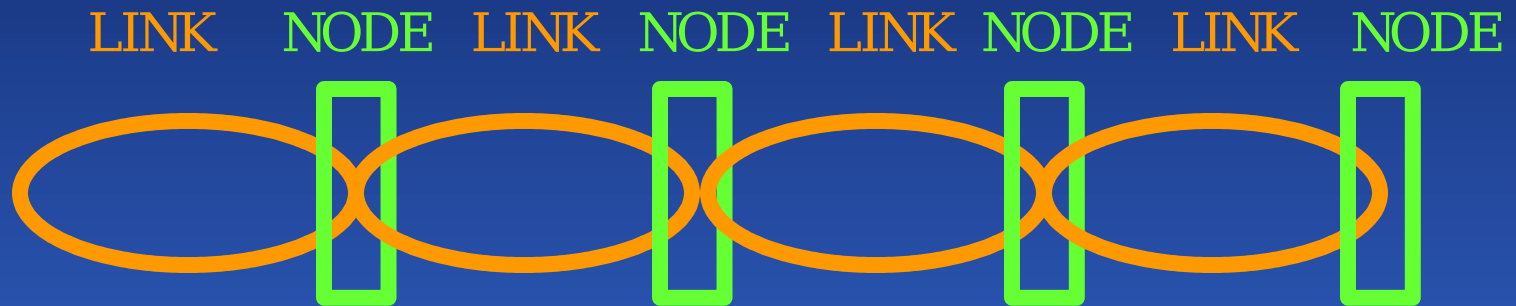
POTENTIAL ADDITIONAL ROLE OF RPE/TSV

✦ *MOBILITY WHEN TRANSPORTATION
BY LAND IS DENIED OR UNSUITTABLE*



- TUNNEL DESTRUCTION
- NO INFRASTRUCTURE
- NBC AVOIDANCE

TRANSPORTATION SYSTEMS ARE SOMETIMES
DEPICTED AS A CHAIN – LIMITED BY ITS
WEAKEST LINK.....



BUT IT'S REALLY A SYSTEM OF LINKS AND
NODES, LIMITED AT THE NODES

Summary

- *Sealift will likely continue to play a critical role in Army Force Projection*
- *The TSV can provide a large step forward in force projection rates*
- *The R & D Community could play an important role in enhancing transportation nodes*
- *SPOD Enhancements could become a vital force projection tool when combined with TSV*